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(54) Title: IMAGE MODEL BASED ON N-PIXELS AND DEFINED IN ALGEBRAIC TOPOLOGY, AND APPLICATIONS THEREOF

DEFINING A PIXEL DIMENSION n TO PRODUCE
A n -PIXEL IMAGE SUPPORT

6601

EXPRESSING THE n -PIXELS OF THE IMAGE
SUPPORT ALGEBRAICALLY IN RELATION TO
THE n -PIXEL DIMENSIONS

6602

PRODUCING A GEOMETRICAL COMPLEX
INCORPORATING AT LEAST ONE n -PIXEL
IMAGE SUPPORT

6603

EXPRESSING THE GEOMETRICAL COMPLEX
ALGEBRAICALLY BY MEANS OF q -CHAINS

6604

EXPRESSING THE SCALAR VECTORS AND
MATRICES BY MEANS OF THE COEFFICIENTS
OF THE q -CHAIN

6605

EXPRESSING GLOBAL QUANTITIES WITH ALL
 q -PIXELS THROUGH q -COCHAINS F_q
COMPRISING ASSOCIATING GLOBAL
QUANTITIES TO THE q -PIXELS AND ITS FACES

6608

(57) **Abstract:** A computational image model comprises an image support including a structure of n -pixels comprising pixel faces, quantities related to image features, and an algebraic structure relating the quantities to the n -pixels and/or pixel faces, the algebraic structure comprising algebraic operations defining a relation between the quantities. A method of computationally modelling an image comprises producing an image support including a structure of n -pixels comprising pixel faces, defining quantities related to image features, and relating the quantities to the n -pixels and/or pixel faces through an algebraic structure, and relating the quantities to each other through algebraic operations.